

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

IN RE	)	
INTEL CORP. MICROPROCESSOR	)	
ANTITRUST LITIGATION	)	MDL Docket No. 05-1717-JJF
	)	
ADVANCED MICRO DEVICES, INC., a	)	
Delaware corporation, and AMD	)	
INTERNATIONAL SALES & SERVICE LTD,	)	
a Delaware corporation,,	)	
	)	
Plaintiffs,	)	
	)	Civil Action No. 05-441-JJF
v.	)	
	)	
INTEL CORPORATION, a Delaware	)	DM _____
corporation, and INTEL KABUSHIKI KAISHA,	)	
a Japanese corporation,	)	
	)	
Defendants.	)	

**DECLARATION OF WILLIAM T. SIEGLE  
IN SUPPORT OF AMD'S MOTION TO COMPEL**

I, William T. Siegle, declare as follows:

1. I joined AMD in 1990 and worked for the Company until my retirement in May, 2005. In early 1999, I assumed responsibility for worldwide silicon wafer production (including microprocessors). Although I relinquished microprocessor manufacturing responsibility at the end of 2001 to my colleague, Gary Heerssen, because of Mr. Heerssen's subsequent illness I remained as a de facto head of microprocessor manufacturing through 2002, and I served in a dual role that included manufacturing until Mr. Heerssen's successor, Daryl Ostrander, was named in 2004. When I left the Company, my title was Senior Vice President and AMD Chief Scientist.

2. As a result of my AMD job responsibilities, I am knowledgeable about the nature, location and capabilities of AMD's various microprocessor fabrication facilities around the

world. I submit this declaration in support of AMD's motion to compel production of documents and other information bearing upon Intel's attempts to prohibit, limit or dissuade its foreign customers from purchasing x86 microprocessors made by AMD or to punish them for doing so.

3. As discussed in greater detail in the paragraphs that follow, AMD manufactured x86 microprocessors domestically through 2002, and it continued to supply customers, including foreign customers, with domestically manufactured processors from its Austin, Texas plant for more than a year thereafter. With the exception of some 486 foundry chips produced in Scotland in the mid-1990s, up to 2000, AMD manufactured all of its x86 microprocessors *exclusively* at facilities located in the United States. In that year, AMD brought on line a new production facility in Dresden, Germany.

4. For reasons detailed in AMD's complaint, the excellence of the products we introduced in the late 1990s did not translate into the demand for AMD microprocessors that we had hoped for and anticipated. Thus, while we had expected to continue operations at our Austin plant even as Dresden ramped up to capacity, ultimately worldwide orders were not sufficient to keep both plants operating at efficient levels. We thus abandoned plans to update the technology for microprocessor production at Austin and instead dedicated it to the production of lower margin memory products beginning in 2003. Significantly, to the extent that Intel's conduct — both here and abroad — artificially limited customer demand for AMD microprocessors, that conduct significantly contributed to AMD's decision to cease their manufacture in Austin and to withdraw from the U.S. export market. In the absence of Intel's misconduct, and the consequent limits it placed on AMD's business, we would have continued to manufacture microprocessors in Austin during 2003 and for at least several years thereafter, and remained engaged in the export of U.S. manufactured microprocessors.

## Background

5. Microprocessors like other semiconductors are produced in very sophisticated, high-technology “*fab*rication” facilities known in the industry as “fabs.” AMD has generally supplied its microprocessor requirements from a single fab.<sup>1</sup> When it first began participating in the semiconductor market in 1969, AMD manufactured chips at a fab (denominated “Fab 1”) located adjacent to its Silicon Valley headquarters. In 1979, AMD opened Fab 5 in Austin, Texas, which was followed by two other Austin facilities, Fab 10 which opened in 1982 and Fab 14/15 which opened in 1985.

6. Semiconductor technology is constantly advancing, and as Intel founder Gordon Moore observed, the density of transistor circuitry generally grows at a pace that allows the number of transistors on a given die (the piece of silicon on which they are embedded) to double every eighteen months. However, the process technology necessary to manufacture these ever-more dense parts must keep pace. As a result, while fabs are generally designed to support three generations of leading-edge technology, reinvestment is generally required for each new generation. New facilities are planned when the reinvestment becomes too great, when the disruption to production (in making the upgrades) is too severe, or when the expected business volumes demand additional capacity beyond what an upgraded fab can provide.

7. AMD opened Fab 25 in 1995 to build its fifth generation K5 product and to augment Am486 production being built in AMD’s California Submicron Development Center. The fab’s capacity, after an expansion, measured in wafer starts,<sup>2</sup> was roughly 5,000 per week,

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<sup>1</sup> AMD has operated other less technologically advanced fabs for the manufacture of lower value products, such as flash memory and less sophisticated logic circuitry.

<sup>2</sup> A “wafer” is the slice of silicon material on which microprocessor die are built. Typically configured in 8” (200 mm) or, more recently, 12” (300 mm) rounds, the number of processors that can be built from a single wafer depends on the die size of the chip and its

equal to approximately 25-30 million microprocessors per year given their die size at the time.

8. Given the relentless pace of innovation in the microprocessor world, work began almost immediately on AMD's next generation fab, designated Fab 30. AMD broke ground for this facility in Dresden, Germany in 1996. The fab came on line in 2000, but it did not achieve its 5,000 wafer-starts-per-week capacity until the second quarter of 2003 and did not ramp up to achieve this benchmark consistently until the third quarter of 2004. Fab 30 was engineered to initially implement 180nm (or 0.18 micron) technology, with easy extendibility to the 130nm generation, utilizing a copper interconnect process (contrasted to the aluminum interconnect utilized at Fab 25) that AMD had designed with Motorola to achieve higher densities.

#### **The Debate Over the Future of Fab 25**

9. With the debut of AMD's sixth generation chip in 1997 (referred to as the "K6"), AMD began building marketshare. The K6 was a clearly viable alternative to Intel products and superior in some graphic applications, enabling AMD to gain a level of acceptance at major computer manufacturers that AMD had not previously enjoyed.

10. The introduction in 1999 of the even more highly-regarded K7, a seventh generation product marketed as the Athlon chip (Bill Gates called it a "home run"), introduced the realistic prospect that the Company might for the first time realize its long-held ambition to achieve a 30% marketshare. The K7 was a clearly superior product to Intel offerings in many applications. It introduced a new micro-architecture that provided power/performance advantages over the existing Intel products and enabled AMD to leapfrog Intel in processing speed and be the first to reach the gigahertz milestone (one billion clock cycles per second), the PC industry's equivalent of breaking the sound barrier. As was the case with the K6,

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process complexity.

manufacture of the K7 began in Austin.

11. Beginning in early 1999, my manufacturing group was reviewing our capacity strategy, and the role of Fab 25 in light of the distinct possibility that the Company might generate demand for its products beyond the capacity of Fab 30 to fill. AMD was strongly motivated to continue microprocessor production in Austin. Not only did it represent an important presence in the community, but AMD did not want to lose the highly skilled and experienced microprocessor production work force, the proximity the fab had to AMD's Austin circuit design team, and the close coupling with the joint development work with Motorola, being carried out in the nearby Motorola Austin facilities. A two-fab strategy would also provide us greater manufacturing flexibility. Furthermore, many executives made their home in Austin, and there was an important emotional attachment to the fab. Continued production at Fab 25 was practical. Although some of the equipment in the fab was reaching the end of its useful life for microprocessors, we estimated that the fab could be retrofitted with state-of-the-art tools and converted to cutting-edge copper technology supporting 130nm production for less than \$500 million, a fraction of the \$2-3 billion price tag attached to a completely new facility. And such an upgrade would delay the need to bring on line the next facility slated for construction, then denominated Fab 35.

12. The question remained one of demand. AMD's Founder, Chairman and CEO, Jerry Sanders, repeated the Company's goal of achieving a 30% marketshare at the 2000 shareholder's meeting, and declared that if it were met, the Company intended to continue microprocessor production at Austin:

"Our long-held goal has been, and remains, to capture a 30 percent unit share of the PC processor market by the end of 2001. With the production capacity of Fab 25 in Austin and Fab 30 in Dresden, by

the end of next year we will have in place the production capacity to achieve this goal "

13. My AMD manufacturing co-executive (and manufacturing successor), Gary Heerssen, was tasked with the job of analyzing the economics of our fab production in light of a growing success in the marketplace and recommending a future course for Fab 25. In a presentation he made in the Fall of 2000 to a group of Company senior executives, he concluded that assuming AMD captured and maintained a 30% marketshare, demand would be sufficient to support both fabs. In a slide entitled "How am I Leaning?" Gary reflected the thinking of many of us when he answered "Upgrade Fab 25; Defer Fab 35."

14. Mr. Heerssen refined his analysis later in the year. In an October 2000 presentation made to the AMD Executive Council, Mr. Sanders' semiannual senior executive forum, Heerssen analyzed whether Fab 25 could be efficiently utilized given a variety of production volume scenarios including (a) attaining a 30% marketshare by 2002 in part by attracting Tier 1 Commercial business; (b) attaining it but only by 2005 or 2006; (c) attaining only a 26% marketshare; and (d) attaining no appreciable marketshare increase. He concluded with the following slide recommending an upgrade of Fab 25 and its continued use as a

## Conclusion

**AMD**

- ☐ **Best match of capacity to demand is from Fab 25 upgrade to copper**

- ✓ Opportunity for upside support to Best Guess Case
- ✓ Defers need for Fab 35 to ~ 2006

- ☐ **Without Fab 25 upgrade, demand can be met only with substantial addition of foundry source**

- ☐ **Financial return of Fab 25 upgrade is at least 2X that of Fab 35**

- ✓ Very negative short term cash flow avoided

CCI:750757

*O Also, leverages considerable R&D expertise in Fin*

*O Allows continued "transistor development" support to Fab 35*

microprocessor facility:

15. Plans were thereafter initiated to upgrade Fab 25 and establish a dual fab strategy. The conversion of Fab 25 to copper technology so as to keep it in microprocessor service was budgeted in the December 4, 2000 version of our Group's Three Year Plan in 2000.

**Reassessment in Light of Insufficient Demand to Fill Two Fabs**

16. Despite the Company's unit marketshare improving from a low of 7% in 1995 to 17% in 2000, the optimism of 1999 and early 2000 gave way to disappointment. The 30% marketshare aspirational goal that Mr. Sanders had set began to look unattainable (in any near term) given the volume of customer orders.

17. Ultimately, we determined that current and near future demand for AMD microprocessors would not support two 130nm copper fabs, and thus the cost of upgrading Fab 25 could not be justified. As individual group financial plans were consolidated into a company-wide budget, our manufacturing group plan was amended to abandon the Fab25 upgrade, based on the fact that the unit volumes that could be committed would not produce a viable financial plan with the continued use of a partially loaded Fab 25. We did not entertain the alternative of running one of the two fabs at less than optimum capacity since, given the very high fixed costs associated with a fab, our average costs per unit would have been driven to non-competitive levels. Any shortfall that might develop, we concluded, could hopefully be covered by utilizing independently owned foundries to produce AMD processors.

18. Eventually we settled on a plan to convert Fab 25 to produce lower-margin flash memory in support of a joint venture with a Japanese semiconductor company. Flash shipments began in 2002, though the decision to discontinue microprocessor production at Fab 25 did not become irreversible until 2004, by which we had ramped flash production to full capacity. Using



the fab to make flash was viewed as the most viable way to get continuing value from a capital asset in which we had much invested and to avoid the prospect of significant employee layoffs. Earlier this year, AMD's interest in the joint venture was spun off into an independent, publicly-owned company, Spansion, which now owns Fab 25.

#### **Microprocessor Production at Fab 25 Had Demand Been Greater**

19. In short, Fab 25 was removed from microprocessor service because of the absence of sufficient anticipated orders to support two fabs.

20. I defer to those closer to the marketplace for the reasons why we were unable to garner sufficient orders for our very highly regarded Athlon family of processors. Had there been sufficient demand to justify its renovation and continued operation, we would not have closed Fab 25 but instead continued to use it for microprocessors. Based on the analyses we did at the time, we concluded that there was very little prospect of garnering a sustained marketshare of 30% or any lower percentage that would have justified operating two 5,000 wafer-start fabs. Had our forecasts been different, we undoubtedly would have upgraded Fab 25 to 130nm copper technology, which would have enabled it to participate in the production of not only our K7 Athlon product but also the K8 generation of products that we introduced beginning in 2003, including the Opteron, Turion64 and Athlon64.

21. Moreover, had greater demand existed for AMD product in the years prior to the closure of Fab 25, it clearly would have had to come from domestic production. Although Fab 30 began fabricating microprocessors in 2000, it underwent the usual gradual ramp-up for the next three years until reaching its designed capacity of 5,000 wafer starts for the first time during the second quarter of 2003. During the period 2000-2002, on the other hand, Fab 25 was ramping down. From 2000 until its conversion to flash memory production in 2003, the only

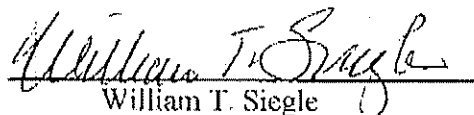


AMD-owned facility that could have produced additional processors, had there been additional orders, would have been Fab 25.

22. After Fab 25 was committed to making memory chips, it is likely that we would have sourced additional AMD microprocessors from a foundry (an independently owned fab that manufactures microprocessors as a service) had we received orders beyond the capacity of Fab 30 to fill. (As noted above, the decision to convert Fab 25 to flash memory production was made with the hope that any shortfall could be covered by a foundry.) At the time, of the four foundries capable of 130 nm microprocessor production, two were located in the United States (Motorola and IBM), introducing the distinct possibility that we would have sourced any shortfall by subcontracting for domestically produced microprocessors.

I declare under the penalty of perjury of the laws of the United States and the State of Connecticut that the foregoing is true and correct

Executed this 27<sup>th</sup> day of October, 2006 at Southbury, Connecticut.

  
William T. Siegle

IN THE UNITED STATES DISTRICT COURT  
DISTRICT OF DELAWARE

CERTIFICATE OF SERVICE

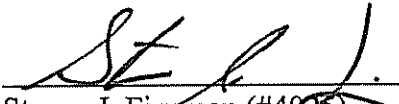
I hereby certify that on October 30, 2006, I electronically filed the foregoing document with the Clerk of Court using CM/ECF which will send notification of such filing(s) and have sent by Hand Delivery to the following:

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